

**CEBAF Proposal for PAC6 June, 1993:**

**A Measurement of the Fifth Structure Function via  
Quasielastic  $^{12}\text{C}$ ,  $^{16}\text{O}(\vec{e}, e'p)$**

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**Abstract**

Using the polarized electron beam and the out-of-plane capability of the SOS in Hall C, we propose to measure the electron helicity asymmetry,  $A_e$ , for  $^{12}\text{C}$  and  $^{16}\text{O}(\vec{e}, e'p)$  reactions over the quasielastic region at  $Q^2$  of 0.25, 0.6, and 1.0 ( $\text{GeV}/c^2$ ). The observable  $A_e$  is related to the “fifth structure function”, which is primarily sensitive to final state interactions and therefore to the p-N optical potential. We request 480 hours of beam time for this study.